1N4001 SERIES

1.0 Amp Silicon Rectifier Diodes

Major Ratings and Characteristics

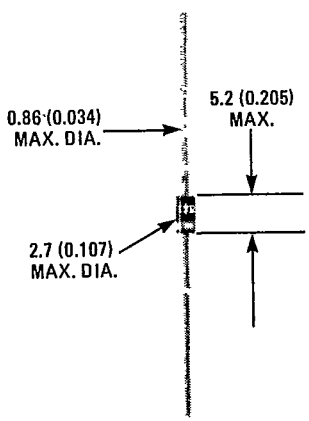
	1N4001	Units
$I_{F(AV)}$	1.0 *	A
@ Max. T_A	75 *	°C
I_{FSM}		
@ 50 Hz	28.7	A
@ 60 Hz	30 *	A
$I^2\sqrt{t}$	58.1	$A^2\sqrt{s}$
T_J Range	-65 to 175 *	°C
V_{RRM} Range	50 to 1000 *	V

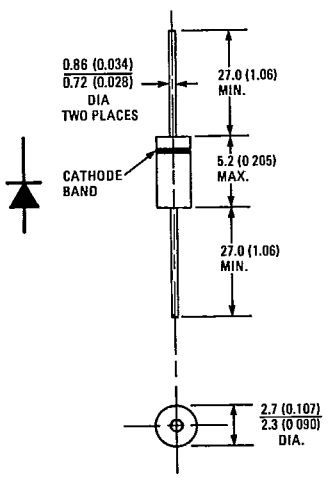
Description/Features

- Economical 1 ampere general purpose diode for industrial application
- Molded epoxy DO-204AL case style
- Low forward voltage drop and high surge rating
- Excellent reliability

*JEDEC registered value.

CASE STYLE AND DIMENSIONS





Case Style DO-204AL (DO-41)
Dimensions in Millimeters and (Inches)

VOLTAGE RATINGS

Part Number	V_{RRM} – Max. Repetitive Peak Reverse Voltage (V) T = –65 to 175°C	$V_{R(RMS)}$ – Max. RMS Reverse Voltage (V) T = –65 to 175°C	V_R – Max. DC Blocking Voltage (V) T = –65 to 165°C
1N4001	50*	35	50*
1N4002	100*	70	100*
1N4003	200*	140	200*
1N4004	400*	280	400*
1N4005	600*	420	600*
1N4006	800*	560	800*
1N4007	1000*	700	1000*

ELECTRICAL SPECIFICATIONS

		1N4001	Units	Conditions
$I_{F(AV)}$	Max. average forward current	1.0*	A	Half sine wave conduction
	@ Max. T_A	75*	°C	① , double side cooled.
I_{FSM}	Max. peak one cycle, non-repetitive surge current	28.7	A	Half cycle 50 Hz sine wave or 6 ms rectangular pulse. Following any rated load condition, and with rated V_{RRM} reapplied.
		30*		Half cycle 60 Hz sine wave or 5 ms rectangular pulse.
$I^2\sqrt{t}$	Max. $I^2\sqrt{t}$ for fusing ①	58.1	$A^2\sqrt{s}$	t = 0.1 to 10 ms, with V_{RRM} following surge = rated V_{RRM}.
V_{FM}	Max. peak forward voltage	1.1*	V	T_A = –65°C to 75°C, I_F = 1 Adc
		1.6*	V	T_A = –65°C to 75°C, $I_{F(AV)}$ = 1A (3.14A peak)
I_R	Max. dc reverse current	10*	μA	T_A = 25°C — V_R = Rated V_R.
		50*	μA	T_A = 100°C
$I_{R(AV)}$	Max. average reverse current	30*	μA	T_A = 75°C, $I_{F(AV)}$ = 1A, V_{RRM} = rated V_{RRM}

THERMAL-MECHANICAL SPECIFICATIONS

T_J	Max. operating junction temperature range	–65* to 175*	°C	
T_{stg}	Max. storage temperature range	–65* to 200*	°C	
wt	Approximate weight	0.33 (0.012)	g (oz)	
	Case Style	DO-204AL (DO-41)		

① T_L is measured 8.7 mm (0.344 in.) to 9.5 mm (0.375 in.) from device case.

① I^2t for time $t_x = I^2\sqrt{t} \cdot \sqrt{t_x}$.

*JEDEC registered values.

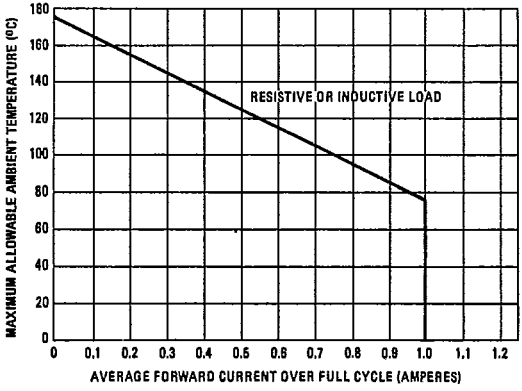


Fig. 1 – Average Forward Current Vs. Maximum Allowable Ambient Temperature

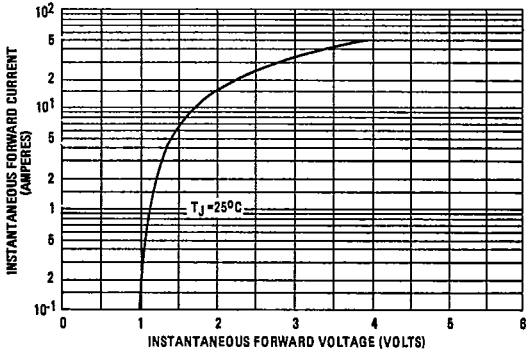


Fig. 2 – Maximum Forward Voltage vs. Forward Current

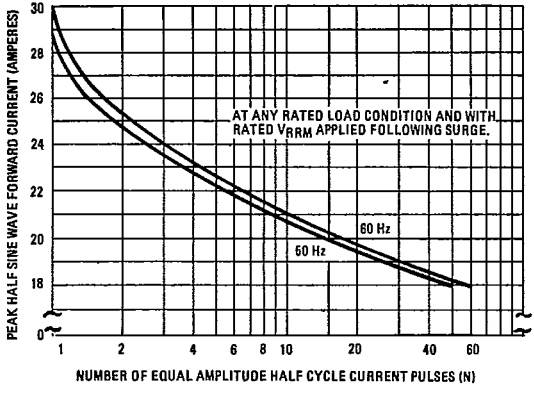


Fig. 3 – Maximum Non-Repetitive Surge Current Vs. Number of Current Pulses